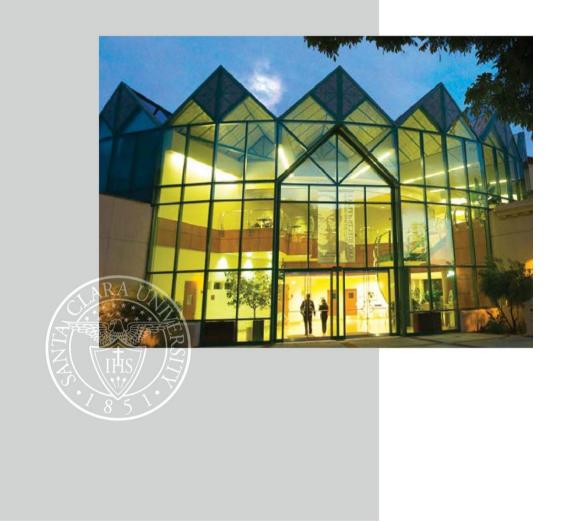
ETHICS IN TECH PRACTICE:

Sample Design Workflow

MARKKULA CENTER FOR APPLIED ETHICS at Santa Clara University



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	 Technical and Market Research Casuistry (Case-Based Ethical Analysis of similar product ideas and their outcomes; what lessons/risks may transfer to this project?)
	• Early Storyboarding/Wireframing of Product Functionality
	• Expanding the Circle (broaden your vision of stakeholder needs/capacities/interests beyond ideal user. Also, what are the dual-use cases?)
	•Technical Risk Scanning
	• Ethical Risk Scanning (what are the most significant ethical risks/concerns that this project generates?
ty	•Technical and Ethical Pre-Mortem (assume this project fails. Where will the human/organizational failure points be? How can we avoid them?)
ent	- reclinical and Ethical re-infortent (assume this project fails, where will the human organizational failure points be. now can we avoid them, j
	•Build
	 Remember the Ethical Benefits of Creative Work (is this prototype still on track to deliver the envisioned benefits?)
e	• Expanding the Circle (is there anyone this prototype won't work for, or won't work as well? If so who, and why not? Can/must we fix that?)
	•Code (Front End Experience)
	• Expanding the Circle (continued: which users are we designing for/not designing for? Are we making the mistake of 'designing for ourselves'?)
	•Think about the Terrible People (what openings/incentives might this code leave open for bad actors to exploit/abuse?)
	•Code (Back-End Functionality)
	•(Keep) Thinking About the Terrible People (see above step; think again about dual-use contexts and whether your code invites harm there)
ent	•Remember the Ethical Benefits Again (is this product <i>still</i> on track to deliver the envisioned benefit, or is it becoming something else?)
	•UAT (User Acceptance) and Beta Testing
	• Expanding the Circle (is our test group diverse/disinterested enough to reflect the real social impact of this tool? Or are we preaching to the cho
	• Pre-Mortem (what test feedback might reveal an ethical failure point for this product in the future? Is there a bug fix here, or a deeper ethical fl
	Launch/Marketing
	• Closing the Loop: Ethical Iteration (what feedback channels have we built to give us reliable signals of ethical concerns about the product?)
	•(Keep) Thinking About The Terrible People (who may soon use this product in ways we didn't want, and what is our plan to limit their harm?)
	•Customer Support/Quality Management
	• Expanding the Circle (are we soliciting ethically salient feedback from the full range of affected stakeholders (incl. non-users), or just a narrow so
k	• Closing The Loop (what are we doing with the ethically salient feedback we are getting? Who is responsible for analyzing/acting on it?)
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